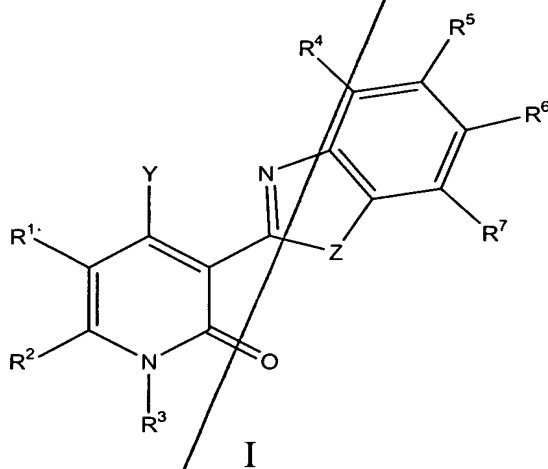


CLAIMS

What is claimed is:

1. A compound having the structure I, a tautomer of the compound, a pharmaceutically acceptable salt of the compound, or a pharmaceutically acceptable salt of the tautomer



wherein,

Y is selected from the group consisting of -OH, -OR⁸ groups, -SH, -SR⁹ groups, -NR¹⁰R¹¹ groups, -CN, -C(=O)-R¹² groups, substituted and unsubstituted alkyl groups, substituted and unsubstituted alkenyl groups, substituted and unsubstituted alkynyl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclalkyl groups, substituted and unsubstituted alkylaminoalkyl groups, substituted and unsubstituted dialkylaminoalkyl groups, substituted and unsubstituted arylaminoalkyl groups, substituted and unsubstituted diarylaminoalkyl groups, substituted and unsubstituted (alkyl)(aryl)aminoalkyl groups, substituted and unsubstituted

heterocyclaminoalkyl groups, substituted and unsubstituted
diheterocyclaminoalkyl groups, substituted and unsubstituted
(alkyl)(heterocycl)aminoalkyl groups, substituted and unsubstituted
(aryl)(heterocycl)aminoalkyl groups, substituted and unsubstituted
heterocycl groups, substituted and unsubstituted aryl groups,
substituted and unsubstituted hydroxyalkyl groups, substituted and
unsubstituted alkoxyalkyl groups, substituted and unsubstituted
aryloxyalkyl groups, and substituted and unsubstituted
heterocycloxyalkyl groups;

Z is selected from the group consisting of O, S, and NR^{13} groups;

R^1 and R^2 join to form a 5 to 7 membered substituted or unsubstituted
ring comprising at least one O, N, or S atom;

R^3 and R^{13} may be the same or different and are selected from the
group consisting of H, -OH, substituted and unsubstituted alkoxy
groups, substituted and unsubstituted aryloxy groups, $-\text{NH}_2$,
substituted and unsubstituted alkylamino groups, substituted and
unsubstituted arylamino groups, substituted and unsubstituted
dialkylamino groups, substituted and unsubstituted diarylamino
groups, substituted and unsubstituted (alkyl)(aryl)amino groups,
substituted and unsubstituted heterocyclamino groups, substituted
and unsubstituted diheterocyclamino groups, substituted and
unsubstituted (alkyl)(heterocycl)amino groups, substituted and
unsubstituted (aryl)(heterocycl)amino groups, substituted and
unsubstituted heterocycloxy groups, substituted and unsubstituted
alkyl groups, substituted and unsubstituted aryl groups, $-\text{C}(=\text{O})\text{H}$,
 $-\text{C}(=\text{O})$ -alkyl groups, and $-\text{C}(=\text{O})$ -aryl groups;

R⁴, R⁵, R⁶, and R⁷ may be the same or different and are independently selected from the group consisting of H, Cl, Br, F, I, -NO₂, -CN, -OH, -OR¹⁴ groups, -NR¹⁵R¹⁶ groups, -C(=O)R¹⁷ groups, -SH, -SR¹⁸ groups, -S(=O)R¹⁹ groups, S(=O)₂R²⁰ groups, substituted and unsubstituted amidinyl groups, substituted and unsubstituted guanidinyl groups, substituted and unsubstituted primary, secondary, and tertiary alkyl groups, substituted and unsubstituted aryl groups, substituted and unsubstituted alkenyl groups, substituted and unsubstituted alkynyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted alkylaminoalkyl groups, substituted and unsubstituted dialkylaminoalkyl groups, substituted and unsubstituted arylaminoalkyl groups, substituted and unsubstituted diarylaminoalkyl groups, substituted and unsubstituted (alkyl)(aryl)aminoalkyl groups, substituted and unsubstituted heterocyclylalkyl groups, substituted and unsubstituted aminoalkyl groups, substituted and unsubstituted heterocyclylaminoalkyl groups, substituted and unsubstituted diheterocyclylaminoalkyl groups, substituted and unsubstituted (alkyl)(heterocyclyl)aminoalkyl groups, substituted and unsubstituted (aryl)(heterocyclyl)aminoalkyl groups, substituted and unsubstituted hydroxyalkyl groups, substituted and unsubstituted alkoxyalkyl groups, substituted and unsubstituted aryloxyalkyl groups, and substituted and unsubstituted heterocyclyloxyalkyl groups;

R⁸ is selected from the group consisting of substituted and unsubstituted alkyl groups, substituted and unsubstituted aryl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, -C(=O)H, -C(=O)-alkyl groups, -C(=O)-aryl groups, -C(=O)O-alkyl groups, -C(=O)O-aryl

groups, $-C(=O)NH_2$, $-C(=O)NH(\text{alkyl})$ groups, $-C(=O)NH(\text{aryl})$ groups, $-C(=O)N(\text{alkyl})_2$ groups, $-C(=O)N(\text{aryl})_2$ groups, $-C(=O)N(\text{alkyl})(\text{aryl})$ groups, $-NH_2$, $-NH(\text{alkyl})$ groups, $-NH(\text{aryl})$ groups, $-N(\text{alkyl})_2$ groups, $-N(\text{alkyl})(\text{aryl})$ groups, $-N(\text{aryl})_2$ groups, $-C(=O)NH(\text{heterocyclyl})$ groups, $-C(=O)N(\text{heterocyclyl})_2$ groups, $-C(=O)N(\text{alkyl})(\text{heterocyclyl})$ groups, and $-C(=O)N(\text{aryl})(\text{heterocyclyl})$ groups;

R^9 and R^{18} may be the same or different and are independently selected from the group consisting of substituted and unsubstituted alkyl groups, and substituted and unsubstituted aryl groups;

R^{10} is selected from the group consisting of H, substituted and unsubstituted alkyl groups, substituted and unsubstituted aryl groups, and substituted and unsubstituted heterocyclyl groups;

R^{11} is selected from the group consisting of H, substituted and unsubstituted alkyl groups, substituted and unsubstituted aryl groups, substituted and unsubstituted heterocyclyl groups, $-OH$, alkoxy groups, aryloxy groups, $-NH_2$, substituted and unsubstituted heterocyclylalkyl groups, substituted and unsubstituted aminoalkyl groups, substituted and unsubstituted alkylaminoalkyl groups, substituted and unsubstituted dialkylaminoalkyl groups, substituted and unsubstituted arylaminoalkyl groups, substituted and unsubstituted diarylaminoalkyl groups, substituted and unsubstituted (alkyl)(aryl)aminoalkyl groups, substituted and unsubstituted alkylamino groups, substituted and unsubstituted arylamino groups, substituted and unsubstituted dialkylamino groups, substituted and unsubstituted diarylamino groups, substituted and unsubstituted (alkyl)(aryl)amino groups, $-C(=O)H$, $-C(=O)-\text{alkyl}$ groups,

- 99 -C(=O)-aryl groups, -C(=O)O-alkyl groups, -C(=O)O-aryl groups,
100 -C(=O)NH₂, -C(=O)NH(alkyl) groups, -C(=O)NH(aryl) groups,
101 -C(=O)N(alkyl)₂ groups, -C(=O)N(aryl)₂ groups,
102 -C(=O)N(alkyl)(aryl) groups, -C(=O)-heterocyclyl groups,
103 -C(=O)-O-heterocyclyl groups, -C(=O)NH(heterocyclyl) groups,
104 -C(=O)-N(heterocyclyl)₂ groups, -C(=O)-N(alkyl)(heterocyclyl)
105 groups, -C(=O)-N(aryl)(heterocyclyl) groups, substituted and
106 unsubstituted heterocyclylaminoalkyl groups, substituted and
107 unsubstituted diheterocyclylaminoalkyl groups, substituted and
108 unsubstituted (alkyl)(heterocyclyl)aminoalkyl groups, substituted and
109 unsubstituted (aryl)(heterocyclyl)aminoalkyl groups, substituted and
110 unsubstituted hydroxyalkyl groups, substituted and unsubstituted
111 alkoxyalkyl groups, substituted and unsubstituted aryloxyalkyl
112 groups, and substituted and unsubstituted heterocycloxyalkyl
113 groups;
- 114 R¹² is selected from the group consisting of H, -OH, alkoxy groups,
115 aryloxy groups, -NH₂, -NH(alkyl) groups, -NH(aryl) groups,
116 -N(alkyl)₂ groups, -N(aryl)₂ groups, -N(alkyl)(aryl) groups,
117 substituted and unsubstituted alkyl groups, substituted and
118 unsubstituted aryl groups, -NH(heterocyclyl) groups,
119 -N(heterocyclyl)₂ groups, -N(alkyl)(heterocyclyl) groups, and
120 -N(aryl)(heterocyclyl) groups;
- 121 R¹⁴ is selected from the group consisting of substituted and
122 unsubstituted alkyl groups, substituted and unsubstituted aryl groups,
123 substituted and unsubstituted heterocyclyl groups, substituted and
124 unsubstituted heterocyclylalkyl groups, -C(=O)H, -C(=O)-alkyl
125 groups, -C(=O)-aryl groups, -C(=O)-heterocyclyl groups,
126 -C(=O)NH₂, -C(=O)NH(alkyl) groups, -C(=O)NH(aryl) groups,

127 -C(=O)N(alkyl)₂ groups, -C(=O)N(aryl)₂ groups,
128 -C(=O)N(alkyl)(aryl) groups, -C(=O)NH-heterocyclyl groups,
129 -C(=O)N-(heterocyclyl)₂ groups, -C(=O)N(alkyl)(heterocyclyl)
130 groups, -C(=O)N(aryl)(heterocyclyl) groups, substituted and
131 unsubstituted aminoalkyl groups, substituted and unsubstituted
132 alkylaminoalkyl groups, substituted and unsubstituted
133 dialkylaminoalkyl groups, substituted and unsubstituted
134 arylaminoalkyl groups, substituted and unsubstituted
135 diarylaminoalkyl groups, substituted and unsubstituted
136 (alkyl)(aryl)aminoalkyl groups, substituted and unsubstituted
137 heterocyclylaminoalkyl groups, substituted and unsubstituted
138 diheterocyclylaminoalkyl groups, substituted and unsubstituted
139 (heterocyclyl)(alkyl)aminoalkyl groups, substituted and unsubstituted
140 (heterocyclyl)(aryl)aminoalkyl groups, substituted and unsubstituted
141 alkoxyalkyl groups, substituted and unsubstituted aryloxyalkyl
142 groups, substituted and unsubstituted hydroxyalkyl groups, and
143 substituted and unsubstituted heterocycliloxyalkyl groups;

144 R¹⁵ is selected from the group consisting of H, substituted and
145 unsubstituted alkyl groups, substituted and unsubstituted aryl groups,
146 and substituted and unsubstituted heterocyclyl groups;

147 R¹⁶ is selected from the group consisting of H, substituted and
148 unsubstituted alkyl groups, substituted and unsubstituted aryl groups,
149 substituted and unsubstituted heterocyclyl groups, -C(=O)H,
150 -C(=O)-alkyl groups, -C(=O)-aryl groups, -C(=O)NH₂,
151 -C(=O)NH(alkyl) groups, -C(=O)NH(aryl) groups,
152 -C(=O)N(alkyl)₂ groups, -C(=O)N(aryl)₂ groups,
153 -C(=O)N(alkyl)(aryl) groups, -C(=O)O-alkyl groups,
154 -C(=O)O-aryl groups, substituted and unsubstituted aminoalkyl

groups, substituted and unsubstituted alkylaminoalkyl groups, substituted and unsubstituted dialkylaminoalkyl groups, substituted and unsubstituted arylaminoalkyl groups, substituted and unsubstituted diarylaminoalkyl groups, substituted and unsubstituted (alkyl)(aryl)aminoalkyl groups, substituted and unsubstituted heterocyclylalkyl groups, -C(=O)-heterocyclyl groups, -C(=O)-O-heterocyclyl groups, -C(=O)NH(heterocyclyl) groups, -C(=O)-N(heterocyclyl)₂ groups, -C(=O)-N(alkyl)(heterocyclyl) groups, -C(=O)-N(aryl)(heterocyclyl) groups, substituted and unsubstituted heterocyclylaminoalkyl groups, substituted and unsubstituted diheterocyclylaminoalkyl groups, substituted and unsubstituted (heterocyclyl)(alkyl)aminoalkyl groups, substituted and unsubstituted (heterocyclyl)(aryl)aminoalkyl groups, substituted and unsubstituted hydroxyalkyl groups, substituted and unsubstituted alkoxyalkyl groups, substituted and unsubstituted aryloxyalkyl groups, and substituted and unsubstituted heterocyclyloxyalkyl groups; and

R¹⁷, R¹⁹, and R²⁰ may be the same or different and are independently selected from the group consisting of H, -NH₂, -NH(alkyl) groups, -NH(aryl) groups, -N(alkyl)₂ groups, -N(aryl)₂ groups, -N(alkyl)(aryl) groups, -NH(heterocyclyl) groups, -N(heterocyclyl)(alkyl) groups, -N(heterocyclyl)(aryl) groups, -N(heterocyclyl)₂ groups, substituted and unsubstituted alkyl groups, substituted and unsubstituted aryl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted aryloxy groups, heterocyclyloxy groups, -NHOH, -N(alkyl)OH groups, -N(aryl)OH groups, -N(alkyl)O-alkyl groups, -N(aryl)O-alkyl groups, -N(alkyl)O-aryl groups, and -N(aryl)O-aryl groups.

1 2. The compound according to claim 1, wherein Y is selected
2 from the group consisting of -OH, -OR⁸ groups, and -NR¹⁰R¹¹ groups.

1 3. The compound according to claim 1, wherein Y is a -NR¹⁰R¹¹
2 group.

1 4. The compound according to claim 1, wherein Z is an NR¹³
2 group.

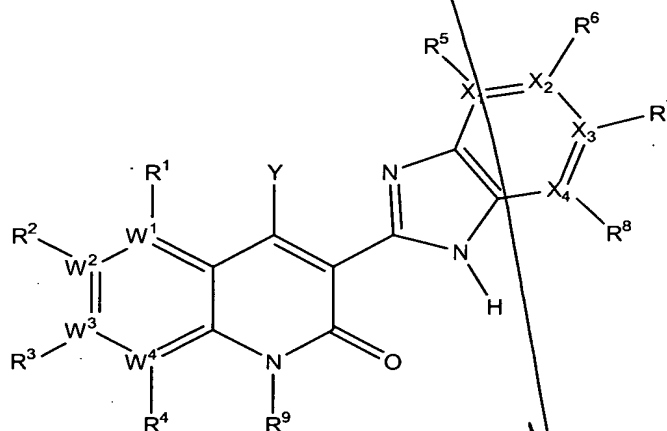
1 5. The compound according claim 1, wherein R⁴ and R⁷ are
2 hydrogen and R⁵ and R⁶ are selected from the group consisting of hydrogen and
3 alkyl groups having from 1 to 4 carbon atoms.

1 6. The compound according to claim 1, wherein R⁵ or R⁶ is an
2 -OR¹⁴ group and R¹⁴ is an alkyl, aryl, heterocyclyl, or heterocyclylalkyl group.

1 7. The compound according to claim 1, wherein R⁵ or R⁶ is a
2 -OCH₂(CH₂)_q(heterocyclyl) group and q is 0, 1, 2, 3, or 4.

1 8. The compound according to claim 1, wherein R¹⁷ is selected
2 from the group consisting of substituted and unsubstituted alkyl groups, substituted
3 and unsubstituted aryl groups, -NH₂, -NH(alkyl) groups, -N(alkyl)₂ groups,
4 -NH(aryl) groups, -N(aryl)₂ groups, -N(alkyl)(aryl) groups, -NH(heterocyclyl)
5 groups, -N(heterocyclyl)(alkyl) groups, -N(heterocyclyl)(aryl) groups,
6 -N(heterocyclyl)₂ groups, and N-containing heterocycles, wherein the N-containing
7 heterocycles are bonded to the carbonyl carbon of the -C(=O)-R¹⁷ group through
8 either a nitrogen atom or a carbon atom in the rings of the N-containing
9 heterocycles.

- 1 9. A compound having the structure III, a tautomer of the
2 compound, a pharmaceutically acceptable salt of the compound, or a
3 pharmaceutically acceptable salt of the tautomer



III

wherein,

W¹, W², W³, and W⁴ are selected from C or N, and at least one of W¹, W², W³, or W⁴ is N;

X¹, X², X³, and X⁴ are selected from C or N, and at least one of X¹, X², X³, or X⁴ is N;

Y is selected from the group consisting of H, -OH, -OR¹⁰ groups, -SH, -SR¹¹ groups, -NR¹²R¹³ groups, -CN, -C(=O)-R¹⁴ groups, substituted and unsubstituted alkyl groups, substituted and unsubstituted alkenyl groups, substituted and unsubstituted alkynyl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclalkyl groups, substituted and unsubstituted alkylaminoalkyl groups, substituted and unsubstituted dialkylaminoalkyl groups, substituted and unsubstituted arylaminoalkyl groups, substituted and unsubstituted

diarylaminomethyl groups, substituted and unsubstituted
(alkyl)(aryl)aminomethyl groups, substituted and unsubstituted
heterocyclylaminoalkyl groups, substituted and unsubstituted
diheterocyclylaminoalkyl groups, substituted and unsubstituted
(heterocyclyl)(alkyl)aminomethyl groups, substituted and unsubstituted
(heterocyclyl)(aryl)aminomethyl groups, substituted and unsubstituted
heterocyclyl groups, substituted and unsubstituted aryl groups,
substituted and unsubstituted hydroxyalkyl groups, substituted and
unsubstituted alkoxyalkyl groups, substituted and unsubstituted
aryloxyalkyl groups, and substituted and unsubstituted
heterocyclyloxyalkyl groups;

$R^1, R^2, R^3, R^4, R^5, R^6, R^7$, and R^8 may be the same or different and
are independently selected from the group consisting of H, Cl, Br, F,
I, $-\text{NO}_2$, $-\text{CN}$, $-\text{OH}$, $-\text{OR}^{15}$ groups, $-\text{NR}^{16}\text{R}^{17}$ groups, $-\text{C}(=\text{O})\text{R}^{18}$
groups, $-\text{SH}$, $-\text{SR}^{19}$ groups, $-\text{S}(=\text{O})\text{R}^{20}$ groups, $\text{S}(=\text{O})_2\text{R}^{21}$ groups,
substituted and unsubstituted amidinyl groups, substituted and
unsubstituted guanidinyl groups, substituted and unsubstituted
primary, secondary, and tertiary alkyl groups, substituted and
unsubstituted aryl groups, substituted and unsubstituted alkenyl
groups, substituted and unsubstituted alkynyl groups, substituted and
unsubstituted heterocyclyl groups, substituted and unsubstituted
alkylaminomethyl groups, substituted and unsubstituted
dialkylaminomethyl groups, substituted and unsubstituted
arylaminomethyl groups, substituted and unsubstituted
diarylaminomethyl groups, substituted and unsubstituted
(alkyl)(aryl)aminomethyl groups, substituted and unsubstituted
heterocyclylalkyl groups, substituted and unsubstituted aminomethyl
groups, substituted and unsubstituted heterocyclylaminoalkyl groups,
substituted and unsubstituted diheterocyclylaminoalkyl groups,

substituted and unsubstituted (alkyl)(heterocyclyl)aminoalkyl groups,
substituted and unsubstituted (aryl)(heterocyclyl)aminoalkyl groups,
substituted and unsubstituted hydroxyalkyl groups, substituted and
unsubstituted alkoxyalkyl groups, substituted and unsubstituted
aryloxyalkyl groups, and substituted and unsubstituted
heterocyclyloxyalkyl groups, and R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , and R^8
may be absent;

R^1 is absent or H if W^1 is N;

R^2 is absent or H if W^2 is N;

R^3 is absent or H if W^3 is N;

R^4 is absent or H if W^4 is N;

R^5 is absent or H if X^1 is N;

R^6 is absent or H if X^2 is N;

R^7 is absent or H if X^3 is N;

R^8 is absent or H if X^4 is N;

R^9 is selected from the group consisting of H, -OH, substituted and
unsubstituted alkoxy groups, substituted and unsubstituted aryloxy
groups, -NH₂, substituted and unsubstituted alkylamino groups,
substituted and unsubstituted arylamino groups, substituted and
unsubstituted dialkylamino groups, substituted and unsubstituted

diarylamino groups, substituted and unsubstituted (alkyl)(aryl)amino groups, substituted and unsubstituted alkyl groups, substituted and unsubstituted aryl groups, $-C(=O)H$, $-C(=O)$ -alkyl groups, and $-C(=O)$ -aryl groups;

R^{10} is selected from the group consisting of substituted and unsubstituted alkyl groups, substituted and unsubstituted aryl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, $-C(=O)H$, $-C(=O)$ -alkyl groups, $-C(=O)$ -aryl groups, $-C(=O)O$ -alkyl groups, $-C(=O)O$ -aryl groups, $-C(=O)NH_2$, $-C(=O)NH$ (alkyl) groups, $-C(=O)NH$ (aryl) groups, $-C(=O)N$ (alkyl)₂ groups, $-C(=O)N$ (aryl)₂ groups, $-C(=O)N$ (alkyl)(aryl) groups, $-NH_2$, $-NH$ (alkyl) groups, $-NH$ (aryl) groups, $-N$ (alkyl)₂ groups, $-N$ (alkyl)(aryl) groups, $-N$ (aryl)₂ groups, $-C(=O)NH$ (heterocyclyl) groups, $-C(=O)N$ (heterocyclyl)₂ groups, $-C(=O)N$ (alkyl)(heterocyclyl) groups, and $-C(=O)N$ (aryl)(heterocyclyl) groups;

R^{11} and R^{19} may be the same or different and are independently selected from the group consisting of substituted and unsubstituted alkyl groups, and substituted and unsubstituted aryl groups;

R^{12} is selected from the group consisting of H, substituted and unsubstituted alkyl groups, substituted and unsubstituted aryl groups, and substituted and unsubstituted heterocyclyl groups;

R^{13} is selected from the group consisting of H, substituted and unsubstituted alkyl groups, substituted and unsubstituted aryl groups, substituted and unsubstituted heterocyclyl groups, $-OH$, alkoxy groups, aryloxy groups, $-NH_2$, substituted and unsubstituted

94 heterocyclylalkyl groups, substituted and unsubstituted aminoalkyl
95 groups, substituted and unsubstituted alkylaminoalkyl groups,
96 substituted and unsubstituted dialkylaminoalkyl groups, substituted
97 and unsubstituted arylaminoalkyl groups, substituted and
98 unsubstituted diarylaminoalkyl groups, substituted and unsubstituted
99 (alkyl)(aryl)aminoalkyl groups, substituted and unsubstituted
100 alkylamino groups, substituted and unsubstituted arylamino groups,
101 substituted and unsubstituted dialkylamino groups, substituted and
102 unsubstituted diarylamino groups, substituted and unsubstituted
103 (alkyl)(aryl)amino groups, -C(=O)H, -C(=O)-alkyl groups,
104 -C(=O)-aryl groups, -C(=O)O-alkyl groups, -C(=O)O-aryl groups,
105 -C(=O)NH₂, -C(=O)NH(alkyl) groups, -C(=O)NH(aryl) groups,
106 -C(=O)N(alkyl)₂ groups, -C(=O)N(aryl)₂ groups,
107 -C(=O)N(alkyl)(aryl) groups, -C(=O)-heterocyclyl groups,
108 -C(=O)-O-heterocyclyl groups, -C(=O)NH(heterocyclyl) groups,
109 -C(=O)-N(heterocyclyl)₂ groups, -C(=O)-N(alkyl)(heterocyclyl)
110 groups, -C(=O)-N(aryl)(heterocyclyl) groups, substituted and
111 unsubstituted heterocyclylaminoalkyl groups, substituted and
112 unsubstituted hydroxyalkyl groups, substituted and unsubstituted
113 alkoxyalkyl groups, substituted and unsubstituted aryloxyalkyl
114 groups, and substituted and unsubstituted heterocyclyloxyalkyl
115 groups;

116 R¹⁴ is selected from the group consisting of H, -OH, alkoxy groups,
117 aryloxy groups, -NH₂, -NH(alkyl) groups, -NH(aryl) groups,
118 -N(alkyl)₂ groups, -N(aryl)₂ groups, -N(alkyl)(aryl) groups,
119 substituted and unsubstituted alkyl groups, substituted and
120 unsubstituted aryl groups, -NH(heterocyclyl) groups,
121 -N(heterocyclyl)₂ groups, -N(alkyl)(heterocyclyl) groups, and
122 -N(aryl)(heterocyclyl) groups;

123 R^{15} is selected from the group consisting of substituted and
124 unsubstituted alkyl groups, substituted and unsubstituted aryl groups,
125 substituted and unsubstituted heterocyclyl groups, substituted and
126 unsubstituted heterocyclylalkyl groups, $-C(=O)H$, $-C(=O)$ -alkyl
127 groups, $-C(=O)$ -aryl groups, $-C(=O)$ -heterocyclyl groups,
128 $-C(=O)NH_2$, $-C(=O)NH(alkyl)$ groups, $-C(=O)NH(aryl)$ groups,
129 $-C(=O)N(alkyl)_2$ groups, $-C(=O)N(aryl)_2$ groups,
130 $-C(=O)N(alkyl)(aryl)$ groups, $-C(=O)NH$ -heterocyclyl groups,
131 $-C(=O)N$ -(heterocyclyl) $_2$ groups, $-C(=O)N(alkyl)(heterocyclyl)$
132 groups, $-C(=O)N(aryl)(heterocyclyl)$ groups, substituted and
133 unsubstituted aminoalkyl groups, substituted and unsubstituted
134 alkylaminoalkyl groups, substituted and unsubstituted
135 dialkylaminoalkyl groups, substituted and unsubstituted
136 arylaminoalkyl groups, substituted and unsubstituted
137 diarylaminoalkyl groups, substituted and unsubstituted
138 (alkyl)(aryl)aminoalkyl groups, substituted and unsubstituted
139 heterocyclylaminoalkyl groups, substituted and unsubstituted
140 diheterocyclylaminoalkyl groups, substituted and unsubstituted
141 (heterocyclyl)(alkyl)aminoalkyl groups, substituted and unsubstituted
142 (heterocyclyl)(aryl)aminoalkyl groups, substituted and unsubstituted
143 alkoxyalkyl groups, substituted and unsubstituted aryloxyalkyl
144 groups, substituted and unsubstituted hydroxyalkyl groups, and
145 substituted and unsubstituted heterocycliloxyalkyl groups;

146 R^{16} is selected from the group consisting of H, substituted and
147 unsubstituted alkyl groups, substituted and unsubstituted aryl groups,
148 and substituted and unsubstituted heterocyclyl groups;

149 R^{17} is selected from the group consisting of H, substituted and
150 unsubstituted alkyl groups, substituted and unsubstituted aryl groups,

151 substituted and unsubstituted heterocyclyl groups, -C(=O)H,
152 -C(=O)-alkyl groups, -C(=O)-aryl groups, -C(=O)NH₂,
153 -C(=O)NH(alkyl) groups, -C(=O)NH(aryl) groups,
154 -C(=O)N(alkyl)₂ groups, -C(=O)N(aryl)₂ groups,
155 -C(=O)N(alkyl)(aryl) groups, -C(=O)O-alkyl groups,
156 -C(=O)O-aryl groups, substituted and unsubstituted aminoalkyl
157 groups, substituted and unsubstituted alkylaminoalkyl groups,
158 substituted and unsubstituted dialkylaminoalkyl groups, substituted
159 and unsubstituted arylaminoalkyl groups, substituted and
160 unsubstituted diarylaminoalkyl groups, substituted and unsubstituted
161 (aryl)(alkyl)aminoalkyl groups, substituted and unsubstituted
162 heterocyclylalkyl groups, -C(=O)-heterocyclyl groups,
163 -C(=O)-O-heterocyclyl groups, -C(=O)NH(heterocyclyl) groups,
164 -C(=O)-N(heterocyclyl)₂ groups, -C(=O)-N(alkyl)(heterocyclyl)
165 groups, -C(=O)-N(aryl)(heterocyclyl) groups, substituted and
166 unsubstituted heterocyclylaminoalkyl groups, substituted and
167 unsubstituted diheterocyclylaminoalkyl groups, substituted and
168 unsubstituted (heterocyclyl)(alkyl)aminoalkyl groups, substituted and
169 unsubstituted (heterocyclyl)(aryl)aminoalkyl groups, substituted and
170 unsubstituted hydroxyalkyl groups, substituted and unsubstituted
171 alkoxyalkyl groups, substituted and unsubstituted aryloxyalkyl
172 groups, and substituted and unsubstituted heterocycloxyalkyl
173 groups; and

174 R¹⁸, R²⁰, and R²¹ may be the same or different and are independently
175 selected from the group consisting of H, -NH₂, -NH(alkyl) groups,
176 -NH(aryl) groups, -N(alkyl)₂ groups, -N(aryl)₂ groups,
177 -N(alkyl)(aryl) groups, -NH(heterocyclyl) groups,
178 -N(heterocyclyl)(alkyl) groups, -N(heterocyclyl)(aryl) groups,
179 -N(heterocyclyl)₂ groups, substituted and unsubstituted alkyl groups,

180 substituted and unsubstituted aryl groups, -OH, substituted and
181 unsubstituted alkoxy groups, substituted and unsubstituted
182 heterocyclyl groups, substituted and unsubstituted aryloxy groups,
183 heterocyclyloxy groups, -NHOH, -N(alkyl)OH groups, -N(aryl)OH
184 groups, -N(alkyl)O-alkyl groups, -N(aryl)O-alkyl groups,
185 -N(alkyl)O-aryl groups, and -N(aryl)O-aryl groups.

1 10. The compound according to claim 9, wherein one of W¹, W²,
2 W³, and W⁴ is N.

1 11. The compound according to claim 9, wherein one of X¹, X²,
2 X³, and X⁴ is N.

1 12. The compound according to claim 9, wherein Y is selected
2 from the group consisting of H, -OH, -OR¹⁰ groups, and -NR¹²R¹³ groups.

1 13. The compound according to claim 9, wherein Y is a -NR¹²R¹³
2 group.

1 14. The compound according to claim 9, wherein R⁵ is H, X⁴ is
2 N, and R⁶ and R⁷ are selected from the group consisting of H and alkyl groups
3 having from one to four carbon atoms.

1 15. The compound according to claim 9, wherein R⁶ or R⁷ is an
2 -OR¹⁵ group and R¹⁵ is an alkyl, aryl, heterocyclyl, or heterocyclylalkyl group.

1 16. The compound according to claim 9, wherein R⁶ or R⁷ is a
2 -OCH₂(CH₂)_q(heterocyclyl) group and q is 0, 1, 2, 3, or 4.

1 17. The compound according to claim 9, wherein R¹⁸ is selected
2 from the group consisting of substituted and unsubstituted alkyl groups, substituted
3 and unsubstituted aryl groups, -NH₂, -NH(alkyl) groups, -N(alkyl)₂ groups,

1 18. A pharmaceutical formulation, comprising the compound
2 . according to claim 1 in combination with a pharmaceutically acceptable carrier.

1 19. A method of treating a patient in need of an inhibitor of
2 vascular endothelial growth factor receptor tyrosine kinase, comprising
3 administering an effective amount of the pharmaceutical formulation according to
4 claim 18 to a patient in need thereof.

1 20. A pharmaceutical formulation, comprising the compound
2 according to claim 9 in combination with a pharmaceutically acceptable carrier.

21. A method of treating a patient in need of an inhibitor of vascular endothelial growth factor receptor tyrosine kinase, comprising administering an effective amount of the pharmaceutical formulation according to claim 20 to a patient in need thereof.

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